

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

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Listing of Claims:

1. (Currently amended) A method for attaining synchronization in a digital transmission system, comprising:
receiving a digital signal carrying transmitted data and a guard period during which no signal is transmitted;
determining a signal envelope for the received digital signal;
filtering the signal envelope using a matched filter having a span corresponding to the guard period; and
determining the guard period from the filtered signal envelope to provide a time reference for the received digital signal;
wherein said step of determining the guard period includes determining the minimum level of the filtered signal envelope to indicate the center of the guard period.

2. (Original) The method of claim 1 wherein said step of determining a signal envelope includes sampling the transmitted data and the guard period.

3. (Currently amended) The method of claim 1, said matched filter having a length approximately equal to a pre-determined length for the guard period of the received digital signal.

~~4.~~ (Canceled)

~~4~~ 5. (Original) The method of claim 1, wherein the digital transmission system uses orthogonal frequency division multiplexing for transmission.

5 ~~6~~⁴. (Original) The method of claim ~~5~~⁴, wherein the digital transmission system is a wireless communications system and said method is performed by a remote wireless unit.

6 ~~7~~. (Original) The method of claim 1, wherein said digital signal is received at a signal level weaker than a pre-determined threshold for regular communications service within the digital transmission system.

7 ~~8~~. (Original) The method of claim 1, wherein the digital transmission system is one of a digital audio broadcasting system or a digital video broadcasting system.

8 ~~9~~. (Currently amended) An apparatus for attaining synchronization in a digital transmission system, comprising:

a controller programmable to perform the steps of:

determining a signal envelope for a received digital signal, the received digital signal carrying transmitted data and a guard period during which no signal is transmitted;

filtering the signal envelope using a matched filter having a span corresponding to the guard period; and

determining the guard period from the filtered signal envelope to provide a time reference for the received digital signal;

wherein said step of determining the guard period includes determining the minimum level of the filtered signal envelope to indicate the center of the guard period.

9 ~~10~~⁸. (Original) The apparatus of claim ~~9~~⁸, wherein said step of determining a signal envelope includes sampling the transmitted data and the guard period.

10 ~~11~~⁸. (Currently amended) The apparatus of claim ~~10~~⁸, said matched filter having a length approximately equal to a pre-determined length for the guard period of the received digital signal.

~~12~~. (Canceled)

~~11~~ ⁸~~13~~. (Original) The apparatus of claim ~~8~~, wherein the digital transmission system uses orthogonal frequency division multiplexing for transmission.

~~12~~ ¹¹~~14~~. (Original) The apparatus of claim ~~13~~, wherein the digital transmission system is a wireless communications system and said steps are performed by a remote wireless unit.

~~13~~ ¹³~~15~~. (Currently amended) A digital transmission system, comprising:
a transmitter for transmitting a digital signal carrying user data using an RF carrier;
a receiver to receive the digital signal including:
a controller programmable to perform the steps of:
determining a signal envelope for a received digital signal, the received digital signal carrying transmitted data and a guard period during which no signal is transmitted;
determining a signal envelope for the received digital signal;
filtering the signal envelope using a matched filter matched to the guard period; and
determining the guard period from the filtered signal envelope to provide a time reference for the received digital signal;
wherein said step of determining the guard period includes determining the minimum level of the filtered signal envelope to indicate the center of the guard period.

~~14~~ ¹³~~16~~. (Original) The system of claim ~~15~~, wherein said step of determining a signal envelope includes sampling the transmitted data and the guard period.

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15 ~~17~~. (Currently amended) The system of claim ~~15~~¹³, said matched filter having a length approximately equal to a pre-determined length for the guard period of the received digital signal.

~~18~~. (Canceled)

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16 ~~19~~. (Original) The system of claim ~~15~~¹³, wherein the digital transmission system uses orthogonal frequency division multiplexing for transmission.

¹⁶
17 ~~20~~. (Original) The system of claim ~~19~~¹⁶, wherein the digital transmission system is a wireless communications system and said steps are performed by a remote wireless unit